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ABSTRACT

In June 1991 the Iowa State Board of Education established a task force to conduct a comprehensive review of vocational-technical education in the state. The 10-member task force was asked to develop a vision for vocational-technical education in Iowa, including the roles and relationships between secondary and postsecondary education institutions, and to enhance the delivery of vocational education programs and services to students at both levels. The status of vocational education in grades K-12 and at community colleges and correctional facilities was reviewed. Funding, program delivery, the future workplace, and economic development were identified as major issues, and demographics, diversity in the work force, the economy, education reform, and technology were examined in the specific context of Iowa. After analyzing the changing world market and the resultant changing mission of vocational-technical education in Iowa, the task force members formulated a series of goals related to the following: quality, access, diversity, delivery, resources, image, career-focused education, and accountability. (The final recommendations summarize each of the goals and provide a rationale and strategies for achieving them. Contains 39 references.) (MN)

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A New Vision for Vocational-Technical Education in Iowa

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Final Recommendations of the Vocational-Technical Education Task Force

February 3, 1992

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Executive Summary

Recognizing the changing workplace needs of the state and the nation, the demographic changes facing Iowa, and the increasing demand for efficiency and effectiveness in education, the Vocational-Technical Education Task Force envisioned a new paradigm for education in the 1990s and beyond. This paradigm included a fully integrated and articulated system of vocational and academic education which would provide diverse populations with unrestricted access to quality vocational-technical programs designed to prepare individuals for entry into productive careers as well as other life roles. The success of this integrated system hinges upon the full commitment of Iowa's secondary schools, community colleges, and four-year institutions to increasingly interconnected and collaborative relationships in the design and delivery of vocational-technical education to Iowa's citizens. This task force report recommends a vision, mission, directions for actualization of the vision. It also includes goals, rationales, recommended strategies, and definitions of responsibilities in the following areas: quality, access, career-focused education, delivery systems, image, use of resources, accountability, and diversity.

Introduction

The Vocational-Technical Education Task Force was established in June 1991 as a result of the State Board of Education's need to view vocational-technical education in a comprehensive manner. During the development of the *Iowa Three-Year State Plan for Vocational Education*, as required by the federal Carl D. Perkins Applied Technology and Vocational Education Act of 1990, it became apparent that several related issues needed to be discussed and addressed from a policy perspective. These included funding, what programs should be offered and in what way, educational reform, the nature of the future workplace, economic reform, and program accessibility to special populations.

With these and other considerations in mind, the Director of the Department of Education recommended to the State Board that a task force be established to examine these issues and to identify a new vision for vocational-technical education in Iowa. The ten task force members were appointed by the Director based upon nominations from education organizations which had strong relationships with vocational education. Secondary and postsecondary education were equally represented. Teacher education institutions and the State Council on Vocational Education were also represented. The Task Force had geographic, gender, and ethnic representation.

The charge to the task force was to assist the Director and the State Board in defining a vision for vocational-technical education in Iowa, including roles and relationships between secondary and postsecondary institutions; and to recommend strategies to enhance the delivery of vocational education programs and services to both secondary and postsecondary students, including, but not limited to, consideration of the Perkins Act, state legislative directions such as S.F. 449, and major activities such as the World-Class Schools initiative.

Status of Vocational-Technical Education In Iowa

K - 12 School Districts

Iowa's 425 K-12 school districts provide opportunities for students to enroll in vocational offerings which are designed to prepare individuals to enter and advance in the work force immediately following graduation from high school and also to continue occupational preparation in postsecondary institutions. Secondary students have access to and enroll in a variety of programs offering career exploration and employment preparation.

This current year, secondary schools are experiencing a period of transition as members of the instructional staff are revising their offerings to meet the requirements of state and federal legislation. In the past, there were dual standards for program design and qualifications for instructional personnel. Those programs which received State Board approval met identified state standards and received federal reimbursement from the state vocational appropriations and were eligible to receive federal funding by participating in the competitive grant process.

With new federal legislation being implemented this year and state standards becoming effective next year, all programs with an identified objective of providing occupational preparation will meet the same standards. Instructional personnel are designing each offering to be competency-based and to utilize an instructional method which permits each student the opportunity to apply of the knowledge learned.

Many districts are providing a variety of offerings to all students while other districts' offerings are limited. By July of 1992, each secondary student will have access to programs in a minimum of four vocational areas. In general, vocational education programs offered by secondary schools fall within six vocational service areas: agricultural education, business and office education, health occupations education, home economics education, marketing education, and industrial education. A student may choose to enroll in all of the courses within a program area or choose selected offerings in one or more of the areas.

These opportunities are provided by secondary districts offering programs on site, by secondary districts sharing programs and instructional personnel, and by community colleges providing programs to serve secondary age students.

Programs which are designed for occupational preparation must be structured to provide maximum opportunities for individuals to become competent in the shortest timeframe. Programs are being reviewed to assure that a continuum is provided for students to begin occupational preparation at the secondary level and continue at the postsecondary level without duplication. Each secondary program must articulate with a program in a postsecondary institution. The state approved listing of minimum competencies, which has been validated by individuals from business and industry, provides a framework upon which the curriculum may be developed. This achieves consistency of instructional content between secondary districts. Staff members in each community college are currently working closely with personnel in secondary districts to design offerings which articulate with programs in one or more postsecondary institutions.

Community Colleges

Recognizing that education and training are the primary systems by which the human capital of a nation is preserved and increased, Iowa's 15 community colleges, with 31 campuses provide access to postsecondary education for the citizens of Iowa. Programming includes vocational-technical education, arts and science curricula for individuals seeking the first two years of a baccalaureate degree, re-training opportunities for working and displaced adults, customized training for business and industry, and coordinated programs and services with secondary schools.

Currently, Iowa's community colleges provide a variety of State Board approved vocational programs of differing lengths: manufacturing, production, and engineering; the health sciences; agriculture and related technical fields; environmental, regulatory, and natural resources; business, secretarial, marketing, and management; human resources, child care and education; and programming for the service industry. These programs are designed to meet unique local business and industry needs while supporting state and national market changes based upon the advice and assistance of local advisory committees as well as labor market assessments.

During 1989-90, 94 percent of Iowa's community college students came from within the state; 39 percent attended part-time, and 57 percent were female. The average age was 27. In general, 50 percent of community college students are adult high school graduates who have experienced an interruption in their education between high school and college, 12 percent are transfers from other postsecondary institutions, and 38 percent enroll directly from high school.

In 1991, Iowa community colleges awarded 10,943 degrees and certificates, 6,512 to women and 4,431 to men. Of these, 62 percent were associate degrees and 38 percent were less-than-two-year certificates or diplomas. Eighty-five percent of Iowa's community college alumni live and work in Iowa, with 11 percent living and working in contiguous states.

A limited number of offerings in the community colleges articulate with programs in other community colleges in the state and a limited number of vocational offerings articulate from the community colleges to four-year colleges and universities.

Adult Training and Retraining

In 1991, federal funds for adult training and retraining were allocated to the 15 community colleges and two secondary districts. Community colleges served a total of 321,754 adults in vocational supplementary courses and seminars, while the two secondary districts served 1,829 adults.

Correctional Facilities

Iowa's youth correctional facilities, through grants from the Department of Education to the Department of Human Services, provide vocational programs at two sites within the state for secondary students.

Four Iowa correctional facilities are locations for a limited number of vocational-technical offerings provided by community colleges for adult offenders.

Major Iowa Issues

Funding

There is an increasing need for vocational education funding given the changing climate of the workplace and constant technology development. If vocational education programs are to continue to be responsive to this climate, to the resulting training needs of business, industry, and labor and to the needs of individuals desiring educational opportunities to prepare them for the workplace, adequate financial resources are critical. Presently, programs offered by community colleges and K-12 districts are supported by approximately $11.2 million in federal vocational education funds, approximately $3.5 in state foundation aid, and a setaside for secondary programs, and at the postsecondary level state foundation aid, local property taxes, and tuition and fees. As resources become more limited, it is essential to review how they are utilized to ensure efficiency while also being responsive to emerging needs.

Program Delivery

Both secondary schools and community colleges are vitally involved in the delivery of vocational education programs, services, and activities. Many discussions have focused upon the delivery of exploratory courses and preparatory programs. Although different types of programs are offered at the two levels, secondary schools and community colleges work with each other in developing and implementing shared vocational education programs, collaborating on the most effective utilization of instructors, facilities, equipment, and financial resources.

In 1989, new state vocational education standards were established for secondary schools and community colleges by the General Assembly. The new standards, which are to be implemented by July 1992, require secondary schools to offer an increased diversity of quality vocational education programs, while both instructional levels are to provide competency-based curricula.

With the implementation of these standards, articulation efforts between secondary schools and community colleges are expanding to avoid unnecessary duplication of program content and provide a continuum of learning between the two levels for students. Special emphasis is being placed on integration of academic and vocational education and ensuring the full participation of special populations.
Education Reform

Across the nation, one major focus of the education reform initiatives is on preparing today's students to be tomorrow's work force. Iowa is actively involved in identifying what changes are necessary if it is to deliver world-class education with the best possible use of all resources. Vocational education is a key partner in this process, especially given the increased emphasis at both the state and national levels to preparing all students to be productive workers in the nation's economy. Critical to positive change is an assessment of what the future may be like and how the delivery system for education will need to change to be ready for that future.

Future Workplace

Several studies regarding employer experiences with schools and their graduates establish that employers seek applicants who have cognitive skills. In addition, they want applicants to possess skills which enable them to function effectively in the workplace. There is only slight variance among the studies regarding what workplace readiness skills are necessary for success.

The United States Department of Labor, through the Secretary's Committee on Achieving Necessary Skills, is presently conducting a study on necessary workplace skills. The preliminary report, *What Work Requires of Schools: A SCANS Report for America 2000*, identifies these as interpersonal skills, thinking skills, self-management skills, and technological skills. The report also calls attention to the need for educational administrators and instructors to shift from using materials and methods of teaching designed for the industrial age to new teaching strategies that will prepare youth and adults for life in a rapidly changing information age.

Economic Development

In recent years, the state of Iowa has recognized the need for comprehensive economic development. Critical to successful economic development are skilled workers.

At the national level, Iowa is noted for workers who are productive, literate, and hard working. Vocational education has played a strong role in the preparation of this quality work force. At a time when technology is changing rapidly and new work opportunities are being developed, vocational education programs must be responsive to the needs of the workplace and ready to assist in further strengthening Iowa's economic base.

Special Iowa Factors and Their Implications

Demographics

Iowa is one of only a few states which experienced a population decline in the past decade. A modest growth in population is expected in the coming two decades. Iowa's increased population will have fewer young people, resulting in an increase in the population's median age to 40 by the year 2010 compared to the current 33. The fastest growing group in percentage terms will be those age 65 and older. Thus, Iowa's work force will show a decrease in new workers and will include a higher proportion of experienced workers than in the past.

Vocational-technical education will need to join with other public and private sectors such as business, government, labor, apprenticeship programs, and non-profit organizations in addressing current and future skilled and semi-skilled work force shortages in the United States and global competitiveness.

Diversity In the Work Force

During the 1990s, women will continue to enter the labor force more rapidly than men, although the change will not be as rapid as before. In percentage terms, the most rapidly growing population will be persons of color. By the year 2010 in Iowa, that population is projected to reach approximately 400,000, with Iowa's white population at 2,700,000.

There is a continuing need to use vocational-technical education more effectively to upgrade worker skills and to assist in moving all persons, including the disadvantaged, persons of color, disabled persons, and the elderly into the work force. Vocational-technical education must be accessible to these and all Iowa citizens.

The Economy

If Iowa is to continue to enjoy favorable economic conditions, it must meet various challenges, including increased international competition.

The Department of Economic Development projects that new-job growth in Iowa will be in the service and manufacturing sectors. Smaller firms will grow more rapidly than larger firms, necessitating increased instruction in entrepreneurship.

Vocational-technical educators will need to upgrade curriculum content to match the continuous change in skill requirements and advanced technological changes, as recommended by advisory committees representing business, industry, and labor. The internationalization of Iowa business will affect occupational competencies and will need to be considered.

Education Reform

At the national level, several studies and reports have addressed the need for major reforms and accountability in education. In addition to the Bush administration's educational proposal entitled *America 2000*, there are other strong pressures for education to better prepare students for the workplace. Reports addressing this issue include *America's Choice: High Skills or Low Wages; What Work Requires of Schools: A SCANS Report for America 2000* (The Secretary's Commission on Achieving Necessary Skills); and *The Forgotten Half*. In Iowa, among the issues being addressed are school reform, early childhood education, meeting the needs of at-risk students, and the role and scope of vocational-technical education in preparing individuals for the marketplace.

Cultural, economical, and technological changes have created an increased demand for improving public education with an expanded emphasis on basic academic skills such as mathematics, science, problem-solving, critical thinking, and communications; and basic work skills, and training.

All secondary and postsecondary institutions will need to integrate and articulate vocational-technical and academic programs to provide opportunities for students to attain their educational goal at the earliest possible timeframe to enter the work force. The integration of academic and vocational-technical instruction is essential to ensure a viable, balanced curriculum.

Students must have multiple options. An individual should be able to move into the work force, apprenticeship, enter a community college or private technical school, or continue advanced study at a college or university. Workers must be able to return to the educational environment for retraining and advanced preparation.

Technology

Computers and information technology are having a significant effect on the need for vocational education in Iowa. Increasingly computers, lasers, and robotics, will be used in the home and in the workplace, particularly in manufacturing, information processing, health care, and food production and processing.

The rapid technological change occurring in the work force will require that schools integrate academic skills with technological skills training.

The Changing World Market

As the educational system strives to provide educational opportunities to enable individuals to become contributing members of the work force in the year 2000 and beyond, the changing forces which will affect the work environment must be considered.

During the next decade, according to *Workforce 2000,* the national labor force will grow at its slowest pace in 60 years, yet at the same time employers will demand more people to fill highly skilled jobs. In Iowa, the number of new high school graduates will be at a low level, providing very little expansion in the working-age population during the 1990s. Nationally, as the baby boomers age, the average age of the work force will climb from 33 today to 39 by the year 2000.

The 1990s will also show increased growth in the number of persons of color and women entering the work force. Persons of color will comprise 29 percent of the new entrants between now and the year 2000, twice the current number in the work force. Almost two-thirds of the new entrants into the work force between now and the year 2000 will be women, with 61 percent of all women of working age expected to have jobs by then.

The workplace will change, with new work hours and work patterns due to improved telecommunications and computer technologies. While 22 percent of today's new jobs require college degrees, by the 21st century almost 33 percent of new jobs will require an associate degree or greater. Rapid technological change will result in a demand for higher language and technological skills for high-skilled careers.

The marketplace will also change. During the past decade, Iowa and the nation's involvement with importing and exporting goods and services has been limited. The global market is growing rapidly, however; by the 21st century, our nation will be competing fully in a global economy. Goods and services will be provided for consumers who are very different from the local consumers currently served.

The age of populations in industrial versus developing nations will contrast significantly. At least 15 percent of the population of industrial nations will be over the age of 65 by the year 2000, compared with less than five percent for most developing nations. While people worldwide will be increasingly well educated, the developing nations will produce a growing share of the world's high school and college graduates. By the year 2000, three-fifths of all students will be from developing nations.

During the 1990s, the world's work force will become even more mobile, and employers will increasingly reach across borders to find workers with the skills they need. These movements of workers and workplaces will be driven by the growing gap between the world's supply of labor and the demands for it. While much of the world's skilled and unskilled human resources are being produced in the developing world, most of the well-paid jobs are being generated in the cities of the industrialized world. The combination of slow work force growth, fewer women entering the work force, earlier retirements, and a shrinking share of high school graduates virtually guarantees that many industrialized nations will face labor shortages at various points during the economic cycles of the 1990s. When they do, a growing array of occupations and labor markets will become internationalized. The future will see a world market for labor as well as a world market for goods and services.

Future of Education in Iowa: A New Paradigm

The Vision

Education is a process by which society transmits basic knowledge, attitudes, and skills necessary for an effective and productive life. Prominent in this process are the various formal delivery systems, beginning with childhood education through adult postsecondary education. The opportunities provided through these systems should be readily available to all individuals.

Iowa's educational system has the dual objectives of preparing students for careers and other life roles such as citizen and parent. Iowa's approach to schooling should be grounded in the premise that these dual objectives must be achieved in a single integrated system. This philosophy represents a paradigm shift from the perception that vocational and academic education have separate agendas. Just as life and career roles are intertwined, schooling for career and non-career roles cannot be meaningfully separated.

Education for career and life roles is a prominent part of an integrated educational system and is an effective vehicle for advancing individual skills and related education. It may be provided by public or private institutions or agencies utilizing a variety of community resources and will be offered at the secondary and postsecondary levels. Such programs represent instruction that will be available to all individuals who want, need, and can profit from it. It should be provided to all regardless of race, age, sex, physical, mental, academic, or economic condition, and must be easily accessible to all.

The Mission

The mission of vocational-technical education in Iowa is to provide opportunities for all students to choose, prepare for and advance in their lifelong careers or vocations. This shall be accomplished by integrating what has traditionally been called vocational-technical and academic education into system that provides the options needed to produce a person who is capable of living in a global society, competing in a world market work force, and receptive to lifelong learning.

The Paradigm Realized

As the year 2000 approaches, the role and vision of vocational-technical education must evolve into an articulated and integrated program between and among secondary schools, community colleges and four-year institutions. Vocational-technical education in the year 2000 and beyond should provide diverse populations with unrestricted access to high quality courses and programs supported by adequate resources and career awareness services. Vocational-technical education and general education will be delivered in an integrated manner which will enhance the image of all education.

This is an era of ever-increasing demands for educational services and a continuing decrease in resources available to provide them. At the same time, the educational system is asked to be more accountable for the learning of students. Student achievement and fiscal accountability will be key measuring devices for the future.

In Iowa, increased consolidation at the secondary levels is predicted. Providing high quality vocational-technical education

for all citizens within the state will be a challenge. Therefore, quality delivery and access within the resources available will become one of the most important issues of the future. Presently two distinct divisions of vocational-technical education exist. They are career exploration and basic work place skill development; and preparation for employment or preparatory skill development. The role for each of these divisions must be defined if the issues of diminished resources, access, and delivery are to be adequately provided.

In the future, access must be provided for all students who wish to stop in and/or stop out of vocational-technical education programs throughout their educational careers. This means that a secondary student should be able to pursue an integrated educational program. It also means that the high school graduate would have the basic workplace skills and also the skills necessary to be competitive in any type of postsecondary environment, whether it is a four-year institution, a community college, or an apprenticeship program. To accomplish this, all programs and courses must be competency-based and articulated throughout the academic environment. Iowa's educational systems must be placed on a smooth continuum. Each of the delivery entities will have a unique and integrated role.

Grades K through 12 should concentrate on exploratory and basic workplace skill development in the areas of communication, computation, science, technology, employability attributes, problem-solving, and decision making. Secondary students should be allowed to explore a variety of career opportunities and be academically prepared for employment or a variety of higher educational options, such as preparatory vocational-technical education at a community college, liberal education at a four-year institution, or an apprenticeship.

Preparation for employment or preparatory skill development can be delivered in a number of ways, but it should be the responsibility of community colleges, in coordination with local districts, to provide this instruction. The funding and equipment required for many preparatory programs are expensive, and the programs must be located in appropriate geographical areas to maximize student accessibility. It is not realistic or economically feasible to locate a full array of preparatory vocational-technical programs in all 425 elementary-secondary districts. Therefore, it will be critical that community colleges collaborate with secondary systems to provide vocational-technical opportunities across the state through articulation, shared program agreements, and new alternatives which will provide incentives for cooperation.

With quality the number one goal of this vision, programs for pre-employment or preparatory skill attainment at the secondary and postsecondary levels must be of the highest quality and be:

- competency-based;
- inclusive of job placement data as one criterion for evaluation;
- approved by the State Board of Education;
- taught by vocationally certified instructors;
- a provider of school-to-work learning opportunities for all students;
- offered directly by a community college under the Postsecondary Enrollment Options Act and/or yet to be defined new alternatives;
- structured so as to blend funding with community colleges for development and implementation of programming for secondary students in selected programs;
- involved with appropriate counseling for students taking job-specific skill training at the secondary level as to the entry level they will have attained and the likely need for additional education and training throughout their work years; and
- involved with assessment and counseling regarding the postsecondary programs to which the secondary students may articulate on completion.

The watchwords of the future will be collaboration and resource management. Iowa's residents must stand ready to provide the resources to adequately assist secondary schools and community colleges in providing the program opportunities required. The state must provide incentives for all educational districts to pursue Chapter 28-E agreements that will further encourage the cooperation and the solidification of this approach. It will be the responsibility of all delivery systems to work together to provide the high quality vocational-technical education that the residents of Iowa need and expect.

In the future, resource management will be extremely important. The state must provide incentives for districts to share resources, and these should be broadly defined as faculty, equipment, buildings, and dollars. This will maximize the delivery of vocational-technical education to all segments of the state.

As articulated in the "Vision Statement," vocational-technical education and general education must be integrated and delivered in a quality and accessible manner. Vocational-technical education should be considered an equal and viable program for students throughout their educational careers, and students should have access at any point. Course choices should be designed so that they will blend and fit into any type of community college programs. Therefore, students completing high school would have the cognitive credentials as well as the psychomotor skills to obtain continued education and to be successful in their chosen careers.

This is a big task for the state of Iowa — to mix, match, merge, and to encourage educational entities to cooperate with one another. It is the sincere hope of the task force that through this vision statement the citizens, the educators, the lawmakers, the Department of Education, and the Governor will better understand and support the role of vocational-technical education in Iowa as the 21st century nears.

Goals and Recommend Strategies

Goal 1 — Quality

All vocational and technical education programs will guarantee that students completing programs and courses will acquire skills, attitudes, and knowledge which meet or exceed both current and emerging employer and individual needs.

Rationale

State officials, secondary school personnel, and community college personnel must expand efforts to enhance program quality in order to respond to the needs of increasingly diverse student populations and communities, changing work force demands, and new technologies.

Currently, offerings do not always provide adequate opportunities for students to prepare to enter and succeed in a work force with rapidly changing needs. Instructional content needs to reflect business, labor, and industry skill needs at the regional, national, and local levels. Business, labor, and industry require that students have a mastery of basic skills to function effectively in a workplace where technology changes rapidly.

Collaboration and coordination are needed for students to progress as rapidly and efficiently as possible. Limited articulation currently exists between secondary and postsecondary programs. Programs need multiple entry and exit points to enhance opportunities for students. The majority of vocational education programs are not current or competency-based with systematic, measurable student performance expectations.

Skills, knowledge, and abilities need to be assessed consistently. Accountability is needed to assure that learning is taking place. Educators must determine students' mastery of defined competencies, ascertain teaching effectiveness, and provide teachers with information to change curriculum and/or methods to meet identified needs. Accrediting agency requirements for assessment of student outcomes and a common core of student performance expectations must be established. A variety of assessment strategies are essential.

New vocational standards and federal legislation require use of competency-based education. A significant number of local education agency and community college faculty need preparation in competency-based vocational education instruction. This instruction should be provided prior to the time new teachers begin their classes. There is a continuing need for teachers to participate in staff development activities which are designed to assist them with program improvement.

Strategies:

A. *Preparation for Employment and Lifelong Learning* — Community colleges and school districts will continually upgrade education by integrating academic and vocational program content to assure that students are prepared with appropriate skills, knowledge, and attitudes for employment and lifelong learning. The curriculum

will include workplace skills and literacy to meet the current and emerging needs of employers and to prepare students for the constantly changing work force.

Other participants: business, industry, and labor; teacher preparation institutions; regional planning boards and consortia; and area education agencies.

B. *Common Core for Workplace Readiness* — The Department of Education will assist secondary schools and community colleges in developing a common core of competencies including academic and workplace readiness skills and knowledge. These will effectively be integrated into all curricular offerings.

Other participants: business, industry, and labor; and area education agencies.

C. *Competency-Based Curriculum* — Community colleges and school districts will develop and deliver a competency-based curriculum with multiple entry and exit points. The Department of Education will provide technical assistance. These programs will be articulated between and within high schools, community colleges, apprenticeship programs, and proprietary schools, where appropriate.

Other participants: business, industry, and labor; and area education agencies.

D. *Student Assessment and Performance Standards* — Secondary schools and community colleges will establish and implement a student assessment system addressing defined competencies and performance standards. The Department of Education will facilitate this effort.

Other participants: business, industry, and labor; and area education agencies.

E. *Teacher Preparation* — Iowa teacher preparation institutions, in cooperation with the Department of Education and the area education agencies, will develop and deliver preservice and in-service instruction in competency-based vocational education. All vocational service areas will be addressed. A statewide network of occupationally competent curriculum specialists and directors will be established to assist local school districts in curriculum development and implementation, as well as in other phases of vocational education instruction. Curriculum content will be upgraded to assure that all students have appropriate problem-solving, critical thinking, and communication skills.

Other participants: business, industry, and labor; area education agencies; community colleges; and secondary schools.

F. *Student Achievement* — Secondary school and community college instructors will encourage and challenge students to proceed at a pace that will maximize their achievement. While competency-based activities remain the major thrust of vocational education, students will be challenged to exceed the minimum competencies.

Other participants: guidance counselors and parents.

G. *Human Resources* — The State Board of Education and the Board of Regents will establish leadership development programs for educators who administer and teach

vocational education to assist them in developing and supervising quality programs, services, and activities.

Other participants: Regents institutions; private education institutions; teacher preparation institutions; and area education agencies.

Goal 2 — Access

All citizens in the state of Iowa will have unrestricted access to a diverse selection of vocational-technical education programs that coincide with the real and emerging employment opportunities in this region of the nation. This access will start at the secondary level and continue with opportunities for additional career preparation in the postsecondary system. All programming will exceed the minimums specified in the *Code of Iowa* and will be equally accessible to all persons who can benefit.

Rationale

Iowa must continue to provide its citizens, who have diverse needs and backgrounds, with opportunities to reach their full potential by creating greater access to educational programs and services through the established system of secondary schools, community colleges, college outreach centers, and four-year institutions. Articulation of secondary and postsecondary programs and use of distance learning technologies are imperative. Current and future students must be prepared to deal with acceleration of job and skill changes, a knowledge explosion, and the need for "learning to learn" the workplace basics.

Community colleges must continue to serve as a major resource in promoting regional and statewide economic development, including outreach to rural areas, assistance to employers to develop training and retraining programs, and opportunities to individual workers to improve job skills for employment and advancement.

Students needing vocational training should be able to enter and exit the vocational education system at multiple levels throughout their lifetimes. Consequently, alternate delivery systems are essential to ensure ongoing access.

Strategies:

A. *Lifelong Learning* — The Department of Education will ensure that instruction in the need for lifelong learning will be initiated at the elementary level and continued through both secondary and postsecondary levels.

   Other participants: elementary and secondary schools; community colleges; area education agencies; higher education institutions; business, industry, and labor; and parents.

B. *Postsecondary Enrollment Credit* — Secondary schools and community colleges will develop horizontal and vertical articulation agreements to ensure that all students have open and available access to other educational opportunities including dual enrollment and credit in secondary systems and in higher education institutions.

   Other participants: State Board of Education; Board of Regents; business, industry, and labor; and colleges and universities.

C. *Career Options* — The Department of Education will provide technical assistance to secondary schools and community colleges to ensure that the vocational-technical system provides multiple entry and exit options for students to prepare for both employment and continuing education opportunities.

Other participants: business, industry, and labor; and colleges and universities.

Goal 3 — Diversity

Enrollments in all vocational education programs will reflect greater participation from groups formerly underrepresented. Necessary supportive services will be provided to assure entrance to and successful completion of vocational-technical programs.

Rationale

State and federal law requires equity of access to all educational programs. With the growing need for diversity of workers in the workplace, Iowa's educational institutions must assure that persons of color, persons with disabilities, older adults, and persons interested in occupations nontraditional for their sex are provided both access and support services.

Strategies:

A. *Barriers To Enrollments* — Secondary schools and community colleges will identify barriers to enrollment and success for special populations. Support services such as child care, transportation, support groups, tutoring, and translators will be developed and implemented to eliminate all barriers. Resources will be identified to provide the necessary support services.

Other participants: human service agencies; Job Training Partnership Programs; parents; special population coordinators; area education agencies; and employers.

B. *Enrollment Patterns* — Secondary schools and community colleges will assess the needs of underrepresented populations, review vocational education program enrollment patterns, guidance practices, course descriptions and enrollment procedures and, where necessary, make revisions which will result in increased participation of special populations.

Other participants: regional planning boards and consortia; area education agencies; curriculum committees; multi-cultural nonsexist education committees; parents; and advocacy organizations and coalitions.

Goal 4 — Delivery

Quality vocational education will be available for all students through state-of-the-art technology and innovative concepts developed and articulated through the state's various delivery systems.

Rationale

There is an increased need for efficiency of and accessibility to quality vocational programs and instruction. Consistent, quality programs utilizing competency-based instruction and assessment should be provided across the state. Resource sharing should be promoted between educational entities. All districts need to assist in meeting curriculum needs. Educators should work with business, industry, and labor to develop work site experiences for students.

Strategies:

A. *Staff Development* — The Department of Education and the area education agencies will conduct workshops and seminars for educational personnel at secondary schools and community colleges to increase awareness of innovative strategies and available resources. Teacher preparation institutions, area education agencies, secondary schools, and community colleges will be involved in development of a plan to address this need.

   Other participants: secondary schools; community colleges; business, industry, and labor; teacher preparation institutions; higher education institutions; Regents institutions extension services; the legislature; and private proprietary institutions.

B. *Alternate Delivery Systems* — The Department of Education, community colleges, and secondary schools will develop and promote the use of alternate systems for the delivery of vocational programs, including delivery through work-based learning, on-the-job training, apprenticeships, shared facilities, mobile classrooms and instructional sites, and distance learning using telecommunications systems.

   Other participants: regional planning boards and consortia; the legislature; area education agencies; and business, industry, and labor.

C. *Work-Based Learning and Apprenticeships* — Where local opportunities exist, local school districts and community colleges will structure educational programs in cooperation with business, industry, and labor to provide opportunities for students to gain competitive occupational skills from planned and supervised experiences in an employment setting.

   Other participants: business, industry, and labor; Iowa State University Extension Office; area education agencies; and the Department of Education.

D. *Skill Reinforcement* —Secondary schools and community colleges will provide a system that will allow students to return for vocational-technical skills reinforcement if they have entered the work force immediately after graduation and within the first year find that the skills taught in the program are inadequate to meet an employer's requirements.

   Other participants: business, industry, and labor.

Goal 5 — Resources

More effective use of human, physical, and financial resources will be made in the delivery through sharing among all vocational education delivery systems in order to support student achievement and program development.

Rationale

Presently, some unnecessary duplication of course content and resources exists within and among educational institutions. Some students may have to repeat courses in community colleges which they have already completed at high school. Some students also may have to repeat courses at four-year institutions which they have already completed at

community colleges. Innovative resource management strategies need to be developed and implemented. Existing linkages between secondary and postsecondary institutions and between education and business, industry, and labor need to be strengthened. New partnerships should be developed to improve the use of personnel, facilities, and equipment in the delivery of vocational-technical education.

Strategies:

A. *Collaboration* — Secondary schools and community colleges will develop collaborative working relationships with business and industry and other educational institutions. These relations will be designed to develop or maintain appropriate program content, support services, curriculum materials, and equipment through shared facilities and equipment, public-private partnerships, adopt-a-school or adopt-a-program, and school-to-work linkages.

   Other participants: regional planning boards and consortia; the legislature; and governmental agencies.

B. *Financial Incentives* — The Department of Education, secondary schools, and community colleges will study funding sources and formulas for support of vocational education at the secondary and community college levels to develop an agenda which will provide incentives for the cooperation.

   Other participants: area education agencies; regional planning boards and consortia; the legislature; the governor; and business, industry, and labor.

C. *Staff Development* — The Department of Education will provide staff development to enhance teacher knowledge and skills regarding careers and specific vocational education programs through such opportunities as faculty sabbaticals in business and industry, faculty and industrial teaching teams, and guest lecturers and program mentors.

   Other participants: area education agencies; regents institutions; business, industry, and labor; FINE Foundation; community colleges; secondary schools; and the legislature.

D. *Interagency Collaboration* — The Department of Education will promote collaborative efforts among all governmental agencies providing education and training. These include Job Training Partnership Act (JTPA), Job Service, Department of Economic Development, schools, community colleges, and four-year colleges and universities.

   Other participants: area education agencies; education associations; secondary schools; and higher education institutions.

E. *Regional Planning* — The Department of Education will provide guidance and monitoring of regional planning boards and consortia to assure that collaboration is occurring among local school districts, community colleges, and area education agencies regarding the development and implementation of regional plans.

   Other participants: secondary schools, area education agencies; community colleges; and the Department of Economic Development.

Goal 6 — Image

Iowa residents will perceive vocational-technical education as playing a major role in empowering youth and adults to contribute to state economic goals and society in general.

Rationale

Current public perception is that vocational-technical programs are of little value to secondary students. Parental pressures and increased graduation requirements often over-emphasize the importance of college preparation programs. Vocational-technical education may be seen as a "second-class" education, suitable only for academic underachievers. People are often unaware of the excellent opportunities for employment available to graduates of quality vocational-technical programs at both the secondary and postsecondary levels.

Strategies:

A. *Public Relations* — Secondary schools and community colleges will strengthen advisory committees, program planning, evaluation, and staff training through increased interaction with business, industry, labor, the community, parents, and governmental entities.

   Other participants: area education agencies; business, industry, and labor; the Department of Economic Development; and the Department of Education.

B. *Marketing Plan* — The Department of Education will implement a statewide marketing plan of one to three years in collaboration with education, business, industry, labor, community, parents, and governmental agencies to improve and enhance public awareness, understanding, and support for Iowa's vocational-technical education system.

   Other participants: area education agencies; secondary schools; community colleges; governmental agencies; business, industry, and labor; and regional planning boards and consortia.

Goal 7 — Career-Focused Education

A comprehensive, statewide system of career development and guidance programs will be established by all elementary-secondary schools and community colleges. These programs involve activities which provide assistance to youth and adults in making informed choices.

Rationale

A continuum of career guidance and counseling services is needed to help individuals make informed educational choices, plan for realistic career pursuits, and engage in lifelong learning. Presently, approximately 60 to 80 percent of Iowa's students are being prepared to enter baccalaureate degree programs, although only 22 percent of available jobs will require such a degree. Major work force reports project that most jobs will require some postsecondary education, with almost 33 percent of new jobs requiring an associate degree or greater by the year 2000.

While the average adult will be expected to change careers six to seven times during a lifetime, limited guidance and counseling services are available for adult students experiencing career transitions.

Strategies:

A. Career-Focused Education Programs — Local school districts and community colleges will provide career awareness, career exploration, and career development programs, services, and activities for parents and students from elementary level through adult level.

   Other participants: area education agencies; higher education institutions; and business, industry, and labor.

B. Comprehensive Guidance Experiences — Elementary-secondary schools and community colleges will provide comprehensive guidance activities to assist students in decision-making and defining their personal goals.

   Other participants: State Board of Education; Department of Education; Board of Educational Examiners; area education agencies; business, industry, and labor; parents; and guidance organizations.

Goal 8 — Accountability

The effectiveness of vocational-technical programs and service delivery will be documented to support planning, policy development, and legislation.

Rationale

Presently, educational data systems focus on quantitative rather than qualitative aspects of vocational programs, and they do not provide uniform data. With increased emphasis on accountability from the federal and state levels, the state must be better able to document the effectiveness of programs and services delivered by both the secondary school system and the community college system. Local education agencies and community colleges must demonstrate quality and effectiveness at both the institutional level and student outcomes level. Since consistency and uniformity of data are critical to quality planning and evaluation, standard indicators of quality and effectiveness must be developed and implemented.

Strategies:

A. Management Information System — The Department of Education, in collaboration with secondary schools and community colleges, will develop a new management information system (MIS) that provides a database to be used for making state and local management decisions, planning, monitoring, and evaluating programs and services delivered by community colleges and secondary schools. This system will enable education institutions to increase accountability to the state and to their constituents through assessment of institutional effectiveness and student outcomes. The system will also support state policy, legislative requests, and planning.

   Other participants: area education agencies; and business, industry, and labor.

Glossary

A. *Apprenticeship*—Training in occupations that requires a wide and diverse range of skills and knowledge, as well as maturity and independence of judgment. It involves planned, day-by-day training on the job and experience under proper supervision, combined with related technical assistance.

B. *Apprenticeship Training Program* — A program registered with the Department of Labor or the state apprenticeship agency in accordance with the Act of August 16, 1937, commonly known as the National Apprenticeship Act, which is conducted or sponsored by an employer, a group of employers, or a joint apprenticeship committee representing both employers and a union, and which contains will terms and conditions for the qualification, recruitment, selection, employment, and training of apprentices.

C. *Approved Vocational Education Offering*—A program course which has been approved by the State Board of Education, following established procedures, making it eligible for reimbursement from federal and state vocational education funds.

D. *Articulation* — A planned process linking two or more educational systems to help students make a smooth transition from the secondary level of occupational or academic training to the two-year or four-year postsecondary level or to apprenticeship, without experiencing a delay or duplication of learning. Articulation may lead to advanced placements.

Articulation is generally considered to be a systematic process that will permit students to move from one course, program, or educational level to the next without loss of time or resources. A guiding principle of articulation is that no student should be required to repeat the same course content for which credit was received.

E. *Articulation Agreement*—A commitment to a program designed to provide students with a non-duplicative sequence of progressive achievement leading to competencies in a tech-prep education program.

F. *Basic Education Data System (BEDS)*—A system established for collecting secondary enrollment and staff data annually (as of the third Friday of September each year). Staff information only is collected at the postsecondary level (community colleges). Schools complete pre-coded forms to identify and classify courses taught.

G. *Career Education* — A sequence of planned school and community activities designed to provide experience in decision-making, exploration of employment opportunities, and the development of positive attitudes, values, knowledge, and skills in relation to self and the "world of work" that will contribute to personal fulfillment in present and future life opportunities as well as potential economic independence.

H. *Cooperative Education* — A method of instruction of vocational education for individuals who, through written cooperative arrangements between the school and employers, receive instruction, including required academic courses and related vocational instruction by alternation of study in school with a job in any occupational field. Such alternation is planned and supervised by the school and employers so that each contributes to the student's education and to his or her employability. Work periods and school attendance may be on alternate half days, full days, weeks, or other periods of time in fulfilling the cooperative program.

I. *Education* — In broad terms, the lifelong process of acquiring new knowledge and skills through both formal and informal exposure to information, ideas and experiences. In narrow terms, systematic planned instruction that takes place in school.

J. *Exploratory Courses* — Approved vocational education courses in which students encounter learning experiences which relate personal assessment to a wide range of occupations, are provided an awareness of change within the work force and the need for the development of life skills including general employability and specific job skills.

K. *Non-approved Vocational Programs* — Programs which are vocational in nature, but for which State Board approval was not sought and which were not eligible to receive federal vocational education funds prior to fiscal year 1992.

L. *Occupational Education* — Instruction that prepares people for employment in recognized occupations and in new and emerging occupations, helps people make informed occupational choices, and helps people upgrade and update their occupational skills.

M. *Preparatory Programs* — Approved vocational education programs through which students develop general employability and specific job skills.

N. *Specific Job Training* — Training and education for skills required by the employer that provides the individual student with the ability to obtain employment and to adapt to the changing demands of the workplace.

O. *Technology Education* — An applied discipline designed to promote technological literacy which provides knowledge and understanding of the impacts of technology including its organizations, techniques, tools and skills to solve practical problems and extend human capabilities in areas such as construction, manufacturing, communications, transportation, power, and energy.

P. *Tech-Prep Education Programs* — A combined secondary and postsecondary program which leads to an associate degree or two-year certificate; provides technical preparation in at least one field of engineering technology, applied science, mechanical, industrial, or practical art of trade, or agriculture, health, or business; builds student competence in mathematics, science, and communications (including through applied academics) through a sequential course of study; and leads to placement in employment.

Q. *Vocational Education* — Organized educational programs offering a sequence of courses which are directly related to the preparation of individuals in paid or unpaid employment in current or emerging occupations requiring other than a baccalaureate or advanced degree.

Such programs include competency-based applied learning which contributes to an individual's academic knowledge, higher-order reasoning, and problem-solving skills, work attitudes, general employability skills, and the occupational-specific skills necessary for economic independence as a productive and contributing member of society.

R. *Vocational Enrollments* — All enrollments classified as vocational by schools completing the enrollment reports including both approved and non-approved programs.

S. *Vocationally-Reimbursed Enrollments* — Enrollments in vocational education approved by the State Board of Education and reimbursed from federal and state vocational education funds (State Board approved programs only).

T. *Workplace Education* — A program designed to provide students with maturing experiences through experiences in a work setting that will help them become productive, responsible individuals.

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